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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/781,552

02/17/2004

Jean Kodama

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EXAMINER

CHO, HONG SOL

ART UNIT

PAPER NUMBER

2619

NOTIFICATION DATE

DELIVERY MODE

01/02/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
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Office Action Summary

Application No.

10/781,552

Applicant(s)

KODAMA ET AL.

Examiner

Hong Cho

Art Unit

2619

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-48 is/are allowed.
- 6) ☒ Claim(s) 1-9, 12 and 14-20 is/are rejected.
- 7) ☒ Claim(s) 10, 11 and 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informality:

The Applicant is required to provide the status (if patented or abandoned) of the application cited on paragraph [0001] and to remove the attorney docket number on the same paragraph.

Claim Objections

2. Claim 13 is objected to because of the following informality:

Re claim 13, iSCSI, SCTP, iWarp, SDP and DDP should be spelled out.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(e) that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4, 6-8, 12 and 14-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Boucher (US 7191241).

Re claims 1-4, Boucher discloses receiving network packets comprising common case network packets and non-common case network packets (column 9, lines 4-6), processing the common case network packets (in sequence network packets in claim 2) using a hardware acceleration component, processing the non-common case network packets (infrequent case network packets in claim 3 and exception case network packets in claim 4) exception case network packets in claim 4) using software-based code executed on one or more general purpose processors (column 8, line 51 to column 9, line 16).

Re claim 6, Boucher discloses the slow-path subsystem coupled with limited hardware acceleration (figure 6).

Re claims 7 and 20, Boucher discloses slow-path subsystem coupled to the fast path acceleration subsystem such that after processing of the non-common case network packets in slow-path subsystem, the network packets are subsequently processed by the fast-path acceleration subsystem (figure 24; column 38, line 65 to column 39, line 6).

Re claim 8, Boucher discloses the fast-path acceleration subsystem configured to process network packets arriving concurrently on one or more network ports (figure 5).
Re claim 12, Boucher discloses the fast-path and slow-path operating with a plurality of networking protocols (column 8, lines 40-50).

Re claim 14, Boucher discloses network packets are transmitted in a network where Ethernet is employed as a layer 2 protocol and IP is employed as a layer 3 protocol according to OSI nomenclature for networking protocols (column 13, line 23).

Re claim 15, Boucher discloses TCP-IP and iSCSI components that are simultaneously resolved using the fast-path and slow-path subsystems (column 11, lines 64-66 and column 12, lines 12-17).

Re claims 16 and 17, Boucher discloses parsing a plurality of incoming network packet streams from a plurality of network ports, demarcating network packet boundaries, identifying underlying network protocols, and categorizing the network packets for fast-path or slow-path processing (figure 9; column 15, lines 31-56).

Re claim 18, Boucher discloses an ingress buffer configured to buffer incoming packets as necessary to maintain processing throughput (column 5, lines 65-66).

Re claim 19, Boucher discloses routing network packets to the fast-path and slow-path subsystems (figure 6).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boucher in view of Ha et al (US 7099273), hereinafter referred to as Ha.

Re claim 5, Boucheer discloses all of the limitations of the base claim, but fails to disclose the non-common case network packets comprise out-of-sequence network packets. Ha discloses receiving out-of-sequence packets (column 18, lines 23-28). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Boucher with the teaching of Ha for the benefit of providing faster delivery of packets resulted in out of sequence.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boucher in view of Chao (US 6693910).

Re claim 9, Boucheer discloses the fast path acceleration subsystem operating at line rate, but fails to disclose the fast path acceleration subsystem configured to avoid stalls while processing packets in a pipelined manner. Chao discloses avoiding stalls in a reordering buffer (column 8, lines 12-13). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Boucher with the teaching of Chao for the benefit of reliable delivery of packets by reducing the latency within a receiver.

Allowable Subject Matter

7. Claims 10, 11 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 21-48 are allowable.

The following is an examiner's statement for reasons for allowance.

9. Claim 21 is allowable over the prior art of record since the cited references taken individually or in combination fail to particularly teach or fairly suggest at least one pre-classifier module, assigned for at least one network port receiving incoming network packet streams, the at least one pre-classifier module used to partially parse and validate the incoming network packet streams; a parser module configured to parse the incoming network packet streams to demarcate packet boundaries for one or more network protocol segments contained within the network packet streams, the parser module further configured to categorize network packets for processing in a hardware-accelerated fast path if the network packets are identified as being in-sequence or a software-assisted slow-path if the network packets are identified as being out-of-sequence; an ingress buffer queue associated with the at least one network port configured to buffer incoming network packets while they are validated; a dispatcher module configured to dispatch information extracted from the network packets to packet processing and protocol processing components according to whether the network packets are to be processed by the hardware-accelerated fast path or the software-assisted slow path; and a packet processor configured to process the network packets and determine at which location in an application memory area data contained within the network packets should be deposited, the packet processor further configured to effectuate the deposition of the data contained within the network packets into the identified location.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hong Cho whose telephone number is 571-272-3087. The examiner can normally be reached on Mon-Fri during 7 am to 4 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

hc

Hong Cho
Patent Examiner
12/18/2007